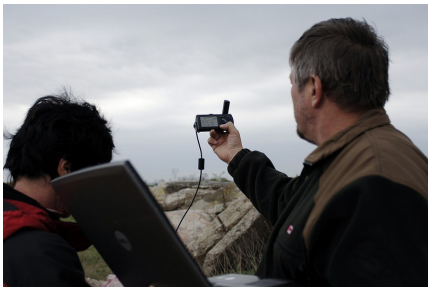
Peaceful Nuclear Cooperation

U.S. Support for NPT Article IV

UNITED STATES & BOTSWANA

Through the International Atomic Energy Agency (IAEA), the United States contributes to the work of many countries using nuclear materials and technology for peaceful purposes. In recent years, U.S. support has focused on achieving tangible and lasting benefits in fields that are vital to human development, including agriculture, human health, water resource management, and human resource development. Since 2000, the IAEA has approved and funded $2,188,112, including $150,700 in 2013, under its Technical Cooperation (TC) program for projects in Botswana.



The United States views its support for the peaceful uses of nuclear energy as a critical part of its efforts to strengthen the IAEA and the global nuclear nonproliferation regime. About 25% of the IAEA's annual budget for peaceful nuclear assistance comes from the U.S. In 2012, the U.S. contributed almost $22 million to the Technical Cooperation Fund and over $6 million in additional funding for training, fellowships, and cost-free experts.

In addition to these longstanding contributions to the IAEA's peaceful uses programs, at the 2010 NPT Review Conference, the U.S. announced a $100 million Initiative to further expand this support over the next five years. The U.S. pledged $50 million towards the IAEA's Peaceful Uses Initiative (PUI), focusing on human health, food security, water resource management, and nuclear power infrastructure development. The U.S. has already allocated over $27 million to specific PUI projects, and welcomes the contributions of Japan, the Republic of Korea, New Zealand, the Czech Republic, Hungary, Sweden, Australia, France, Indonesia, Brazil, Italy, the UK and Kazakhstan to this important Initiative.

NUCLEAR ENERGY

Surging interest in nuclear energy has created new challenges for African countries with uranium resources and other radioactive ores as many lack appropriate legislative frameworks for regulating activities related to uranium exploration and exploitation in order to protect their interests, the environment and the public at large. Botswana is currently participating in a regional TC project sponsored by the United States to strengthen participating Member States' capabilities for effective and efficient management of uranium resources and other radioactive ores, as well as to build the legislative framework to effectively regulate related activities.

1. *Nuclear power plant under construction. Credit: IAEA*
2. *Deep wells and diesel pumps are the water lifeline for many rural residents. Credit: David Kinley III/IAEA*
3. *Nuclear techniques can make cocoa trees resistant to a virus that kills millions each year. Credit: David Kinley III/IAEA*

NUCLEAR SAFETY

The use of nuclear technology has great potential to help shape the future of developing countries, but is not without some risk. In recognition of this, Botswana recently participated in a regional TC project funded by the United States to strengthen national regulatory infrastructures for the control of radiation sources. Botswana currently participates in another regional TC project, also funded by the United States to maintain these regulatory infrastructures and enhance their effectiveness and sustainability.

Self-assessment and regional networking can also significantly contribute to strengthening national regulatory infrastructures, so Botswana is currently participating in a regional TC project sponsored by the United States to improve the performance of regulatory systems and conform to the requirements of international standards through self-assessment and enhanced regional cooperation.

Through additional U.S.-sponsored regional TC projects, Botswana is also currently working to strengthen occupational radiation protection, radiation protection of patients during medical exposure, as well as control of public exposures.

EMERGENCY MANAGEMENT

Radiation emergencies not only risk injury to individuals, but can also contaminate large territories and affect

the living conditions of communities. Botswana is currently participating in a regional TC project sponsored by the United States to strengthen participating countries' national arrangements for response to radiological and nuclear emergencies and improve their compliance with international standards.

AGRICULTURE

In addition to land degradation, many regions in Africa are also vulnerable to climatic variability and frequent droughts. In such context, the introduction and adaptation of irrigation is a key factor for increasing crop production, reducing vulnerability to food deficits and contributing to income generation for resource-poor farmers. Nuclear and isotopic techniques can offer the ability to unravel interactions between water, soil, and applied and existing nutrients pools, providing great insight into the productivity and effectiveness of various irrigation systems. Botswana is therefore currently participating in a regional project sponsored by the United States to develop and pilot test appropriate irrigation systems, methods and related water-nutrient management practices for small-scale farmers in order to increase yield, quality of crops and income.

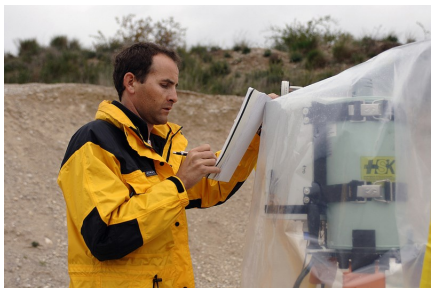
HUMAN HEALTH

One of the greatest challenges developing countries face in fighting cancer is devising plans for building cancer control capacity. Through the IAEA's Programme of Action for Cancer Therapy (PACT), the IAEA has conducted imPACT reviews with funding contributions from the United States in 18 countries, including Botswana. These reviews evaluate the country's readiness to implement cancer control programs, assess the national cancer burden, and provide recommendations on developing the country's cancer control capacity.

HUMAN RESOURCES

To contribute to the manpower development of Member States' nuclear programs, the IAEA awards individual fellowships and organizes group training courses. Every year, numerous fellows and training course participants travel to the United States for training in various peaceful uses of nuclear technology and return to their home country to apply the lessons learned.

In 2010, the United States hosted a training course in the field of nuclear security, in which Botswana participated.



1. *International radiation measurement exercise. Credit: Dean Calma/IAEA*
2. *Reviewing the growth of in vitro cultures of putative potato mutants. Credit: Dean Calma/IAEA*